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CURRENT LITERATURE

BOOK REVIEWS

Progress of botany

In connection with the Vienna Congress, a series of papers describing recent progress in the various fields of botanical activity is being published under the editorship of Dr. J. P. LOTSY. The general title of the series is *Progressus rei botanicae*, and the first part, comprising four papers, has just appeared.[1]

ONTOGENY OF THE CELL.—Under this title STRASBURGER[2] gives an interesting and valuable history of the progress of cell studies since 1875. The various problems which in their turn have been most prominent in cytological investigation are treated with a breadth and grasp which would be impossible except for one who has contributed to the subject during its entire development. Particularly interesting is the treatment of problems like the centrosome, the origin of the spindle, double fertilization, etc., which have passed through the stage of dispute and polemic to comparative agreement. The treatment of the centrosome, which just now is perhaps the most investigated feature of the cell, is suggestive, the earlier problems, which are practically settled, being clearly marked off from the seemingly more difficult problems which are now occupying the attention of investigators. Text cuts are numerous and the bibliography is quite complete.—CHARLES J. CHAMBERLAIN.

PRESENT POSITION OF PALEOZOIC BOTANY.—SCOTT[3] has contributed a most timely account of the present status of our knowledge of paleozoic plants. The recent progress in this field has been most remarkable, and Professor SCOTT'S connection with it has been conspicuous. Naturally the chief attention is given to the vascular plants, JEFFREY'S division of them into Lycopsida and Pteropsida being used for convenience of presentation. Under the first division, Spheno phyllales, Equisetales, Psilotales, and Lycopodiales are presented; and under the second, Filicales, "Pteridospermeae," and "Gymnospermeae." Chief interest centers about the Filicales and pteridosperms. The question as to the existence of paleozoic ferns is answered decidedly in the affirmative; but with the statement that at present our knowledge of the group centers in the Botryopterideae, "which have now come to be of supreme interest in the geological history of vascular plants." The development of our knowledge of pteridosperms is told briefly and clearly, and their separation from gymnosperms as a coordinate group is defended, the provisional diagnosis being as follows: "Male and female sporophylls little differentiated from the vegetative foliage; no cones formed. Anatomy of either stem, or leaf, or both, of a Filicinean type, as was also the habit." It is hard to see that such characters are more important that those which distinguish the acknowledged groups of gymnosperms, and of equal importance with those that distinguish gymnosperms from angiosperms. The relations of the pteridosperms to the Cycadophyta and to the Cordaitales are also discussed. The whole paper is an admirable résumé of our knowledge of the subject, and will serve to present it clearly to many botanists who have either no time to consult the numerous original papers or no access to them.

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[1] Progressus rei botanicae. Herausgegeben von der Association Internationale des Botanistes. Redigiert von Dr. J. P. LOTSY. Erster Band. Erstes Heft. pp. 317. Jena: Gustav Fischer. 1907. *M.* 18.

[2] STRASBURGER, EDUARD, Die Ontogenie der Zelle seit 1875. Op. cit. 1:1-138.

[3] SCOTT, D. H., The present position of paleozoic botany. Op. cit. 1:139-217.

Bibliography of paleozoic fossil plants.—The third paper is an exceedingly useful bibliography prepared by Arber.[4] There is first a list of general monographs and textbooks, followed by a list of memoirs on special subjects, after which the titles are arranged stratigraphically, beginning with the Silurian. Under each geological period, beginning with the Devonian, the arrangement is by plant groups and by countries.

Geographic botany.—The fourth paper is by Flahault.[5] After a general historical and explanatory introduction, the subject is presented under the following captions: (1) Descriptive phytogeography (Floristics), (2) Physiological phytogeography (Ecology), (3) Ontogenetic phytogeography, and (4) Historical phytogeography. The second topic occupies the largest space, the principal subtopics being discussions of the ecological factors, temperature, water, light, soil, humus, and the various so-called climates. Ontogenetic phytogeography deals with the history of the distribution of plants, including the historical origin of groups, migrations, and the succession of floras. Under historical phytogeography the work of man in relation to floras is discussed, including such subjects as the sources of rivers, mountain forests, dunes, etc. The paper brings together in an organized form the study of vegetation from the various points of view that have been often lumped under the general and very indefinite title Ecology. —J. M. C.

A South African textbook in botany

This is not the first elementary textbook written for use in the South African schools, but it is perhaps the first to give so much attention to the ecological point of view.[6] In this respect it is to be compared with the elementary text-

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[4] Arber, E. A., Newell, Bibliography of literature on palaeozoic fossil plants, including some of the more important memoirs published between 1870–1905. Op. cit. 1:218–242.

[5] Flahault, Ch., Les progrs de la géographie botanique depuis 1884, son état actuel, ses problèmes. Op. cit. 1:243–317.

[6] Stoneman, Bertha, Plants and their ways in South Africa. 8vo. pp. ix+283. London: Longmans, Green, & Co. 1906. $1.10.